**Lesson Title:** Mapping Unknown Surfaces

**Time needed:** 2 to 3 Hours

**Notes and reflection from demonstration (key points):**

(in PLC)

Teachers commented that this is a good review for landforms and physical features. The vocabulary is challenging, and the connection to space will reinforce transfer of prior knowledge to an unfamiliar situation. There is a good connection to real-life uses for science and technology. Both teachers also liked the connection to measurement.

**Do any materials need to be prepared for this lesson?**

Paper, masking tape, duct tape, shoe boxes, dowell rods

**Reflection**

**What was your favorite part of the lesson?**

Students really got excited about the mystery in the shoebox. Students were able to make predictions and inferences in regards to what was in the box. The hands-on method of creating their own topo maps was very exciting too.

**What worked well for the students?**

Students had a feeling of accomplishment because they were familiar with these landforms on Earth and were able to transfer that knowledge to how the surface of Mars looks.

**Why is this important?**

The students were able to apply prior knowledge to new learning. This made the technology of mapping the surface of Mars meaningful to them; they felt like they were “in on it.” Also, hands-on exploration of the shoeboxes helped students to understand the realities of how topo maps are made, particularly in unknown or untraveled areas.

**What will you do in the future to improve the chance of this happening again?**

The teachers said that they would use this lesson in the same manner.

**Other comments or suggestions?**

Some of the explanations in the beginning of the lesson plan were a little over a fourth grader’s head. The teachers simplified the explanation a bit, and used a laser pointer to help demonstrate how the technology works.